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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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11/19/2001

Byron Scott Derringer

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FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER
LLP

1300 I STREET, NW
WASHINGTON, DC 20005

EXAMINER

TWEEL JR, JOHN ALEXANDER

ART UNIT

PAPER NUMBER

2636

DATE MAILED: 06/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/988,376

Applicant(s)

DERRINGER, BYRON SCOTT

Examiner

John A. Tweel, Jr.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 44-82 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 44-82 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date. 17.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 44-47, 49, 51, 52, 56-59, 61, 63, 64, 68-71, 73, 75, and 76 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Mehnert** in view of **Byrne and Jain** [U.S. 5,629,691].

For claim 44, the apparatus for detecting objects taught by **Mehnert** includes the following claimed subject matter, as noted, 1) the claimed first transmitter is met by the directional beam transmitter (No. 100), 2) the claimed receiver is met by the receiver (No. 125), 3) the claimed processor is met by the central computer (No. 200), and 4) the claimed user interface is met by the output unit (No. 407) that depicts condition reports regarding the monitored terrain and alarm signals, wherein the transmitter emits a first beam of light, the receiver indicates a first indication if the beam of light is interrupted, the processor sends an indication to the user interface that produces a warning indication. The optical system taught by **Mehnert** does not contain at least one transmitter located at a first location and at least one receiver located at a second location corresponding to the transmitter.

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To locate a receiver and transmitter in two locations is not new in the prior art. The electronic perimeter warning system taught by Byrne includes a transmitter (No. 3) located at a first location and a corresponding receiver (No. 5) located in a second location. This reference is plain evidence that locating the transmitter and receiver in two different locations has been done for quite some time and is notoriously well known in the art of optical transceiving. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include two different locations for the transmitter and receiver for the purpose of taking advantage of a well-known and common optical configuration.

Also, there is no mention of using the system on an airport runway. The system of **Jain** teaches a runway incursion monitoring and warning system that monitors a runway and displays data indicative of unauthorized intrusion onto a runway to an operator. This reference presents an ideal setting onto which a system such as Mehnert and Byrne may be applied. The beam of light may easily substitute the radar units (No. 13) found in the Jain reference in order to detect intrusion onto the runway. People wandering onto a runway can be positively identified and alerted using the system of Byrne.

As Jain presents an ideal platform onto which a system such as Mehnert may be applied, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the system of combined references above for use in a runway situation as these systems positively identify objects that are in a predetermined area. Such a system is ideal for an airport runway.

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For claim 45, the claimed reflectors are met by the retro-reflectors (Nos. 501, 508, 509, and 510) of **Mehnert** and the reflector reflects light from the transmitter to the receiver.

For claim 46, the transmitter and receiver of **Mehnert** form a transceiving unit.

For claim 47, Figure 4 of **Mehnert** depicts a support mechanism for the optical system.

For claim 49, the system of **Mehnert** includes a support mechanism for the optical system.

For claim 51, Figure 5 of the **Mehnert** reference depicts a cover over the optical transceiving unit.

For claim 52, Figure 5 of the **Mehnert** reference depicts a cover over the optical transceiving unit.

For claim 56, the apparatus for detecting objects taught by **Mehnert** includes the following claimed subject matter, as noted, 1) the claimed first transmitter is met by the directional beam transmitter (No. 100) that emits a beam of light, 2) the claimed receiver is met by the receiver (No. 125) that indicates a first indication if the beam of light is interrupted, 3) the claimed processor is met by the central computer (No. 200) that sends a warning condition, and 4) the claimed user interface is met by the output unit (No. 407) that depicts condition reports regarding the monitored terrain and alarm signals. The optical system taught by **Mehnert** does not contain at least one transmitter located at a first location and at least one receiver located at a second location corresponding to the transmitter.

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The claim is interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claim 1 above. Also, there is no mention of using the system on an airport runway.

The claim is interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claim 1 above.

For claim 57, the claimed reflectors are met by the retro-reflectors (Nos. 501, 508, 509, and 510) of **Mehnert** and the reflector reflects light from the transmitter to the receiver.

For claim 58, the transmitter and receiver of **Mehnert** form a transceiving unit.

For claim 59, Figure 4 of **Mehnert** depicts a support mechanism for the optical system.

For claim 61, the system of **Mehnert** includes a support mechanism for the optical system.

For claim 63, Figure 5 of the **Mehnert** reference depicts a cover over the optical transceiving unit.

For claim 64, Figure 5 of the **Mehnert** reference depicts a cover over the optical transceiving unit.

For claim 68, the hazard detection system taught by **Mehnert** includes the following claimed subject matter, as noted, 1) the claimed first transmitter is met by the directional beam transmitter (No. 100) that emits a beam of light, 2) the claimed receiver is met by the receiver (No. 125) that indicates a first indication if the beam of light is interrupted, 3) the claimed processor is met by the central computer (No. 200) that

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sends a warning condition, and 4) the claimed user interface is met by the output unit (No. 407) that depicts condition reports regarding the monitored terrain and alarm signals. The optical system taught by Mehnert does not contain at least one transmitter located at a first location and at least one receiver located at a second location corresponding to the transmitter.

The claim is interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claim 1 above. Also, there is no mention of using the system on an airport runway.

The claim is interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claim 1 above.

For claim 69, the claimed reflectors are met by the retro-reflectors (Nos. 501, 508, 509, and 510) of **Mehnert** and the reflector reflects light from the transmitter to the receiver.

For claim 70, the transmitter and receiver of **Mehnert** form a transceiving unit.

For claim 71, Figure 4 of **Mehnert** depicts a support mechanism for the optical system.

For claim 73, the system of **Mehnert** includes a support mechanism for the optical system.

For claim 75, Figure 5 of the **Mehnert** reference depicts a cover over the optical transceiving unit.

For claim 76, Figure 5 of the **Mehnert** reference depicts a cover over the optical transceiving unit.

3. Claims 80-82 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Byrne** in view of **Jain** and **Dabbs** [U.S. 5,189,425].

For claim 80, the method for detecting objects taught by Byrne includes the following claimed subject matter, 1) the claimed first transmitter is met by the signal transmitting means (No. 3), 2) the claimed first receiver is met by the signal receiving means (No. 5), and 3) the claimed generating an indication is met by the alarm means (No. 7). There is no mention of using the system on an airport runway or using a second set of transmitter and receivers.

The system of **Jain** teaches a runway incursion monitoring and warning system that monitors a runway and displays data indicative of unauthorized intrusion onto a runway to an operator. This reference presents an ideal setting onto which a system such as Mehnert and Byrne may be applied. The beam of light may easily substitute the radar units (No. 13) found in the Jain reference in order to detect intrusion onto the runway. People wandering onto a runway can be positively identified and alerted using the system of Byrne.

As Jain presents an ideal platform onto which a system such as Byrne may be applied, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the system of combined references above for use in a runway situation as these systems positively identify objects that are in a predetermined area. Such a system is ideal for an airport runway.

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Also, there is no mention of operating the system in a series of time intervals. However, there exists a system taught by **Dabbs** that compares angular information from a given source taken over a period of discrete time intervals. This reference is plain evidence that runway monitoring systems have been used that measure information using time intervals. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the measurement of time intervals for the purpose of using such a well-known and common measuring technique.

For claim 81, the method for detecting objects taught by **Byrne** includes the claimed subject matter, as noted, 1) the claimed first transmitter is met by the signal transmitting means (No. 3), 2) the claimed first receiver is met by the signal receiving means (No. 5), and 3) the claimed generating an indication is met by the alarm means (No. 7) in the absence of a beam of light. There is no mention of using the system on an airport runway.

The claim is interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claim 80 above. Also, there is no mention of operating the system in a series of time intervals.

The claim is interpreted and rejected for the same reasons as is mentioned in the rejection of claim 80 above.

For claim 82, the method for detecting objects taught by **Byrne** includes the claimed subject matter, as noted, 1) the claimed first transmitter is met by the signal transmitting means (No. 3), 2) the claimed first receiver is met by the signal receiving

means (No. 5), and 3) the claimed generating an indication is met by the alarm means (No. 7). There is no mention of using the system on an airport runway.

The claim is interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claim 80 above. Also, there is no mention of operating the system in a series of time intervals.

The claim is interpreted and rejected for the same reasons as is mentioned in the rejection of claim 80 above. Regarding the generation of an indication in the presence of a beam of light, as the system of Jain operates using several detectors, a plurality of optical transceivers would produce an indication in the presence of at least one beam of light.

4. Claims 48, 50, 60, 62, 72, and 74 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Mehnert** in view of **Byrne** and **Jain** as applied to claims 44, 56, and 68 above, and further in view of **Reinert, Sr.** [U.S. 6,033,083].

For claim 48, the combination of references above includes the claimed subject matter as discussed in the rejection of claim 44 above. However, there is no mention of presenting the support mechanism as a flush surface.

The airport runway light support apparatus taught by **Reinert, Sr.** includes a lighting mechanism that is embedded in the ground as seen in Figure 11. The obvious advantage of this configuration is to prevent the support mechanism from being exposed to the elements, thereby elongating the operable life of the system. As the primary reference pertain to optical mounting transceivers, it would have been obvious

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to one of ordinary skill in the art at the time the invention was made to support the receiver in a substantially flush surface for the purpose of elongating the life of the system by preventing exposure to the elements.

For claim 50, the claim is interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claim 48 above.

For claim 60, the claim is interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claim 48 above.

For claim 62, the claim is interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claim 48 above.

For claim 72, the claim is interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claim 48 above. The system of Reinert, Sr. may be rotated and lowered into the ground.

For claim 74, the claim is interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claim 48 above. The system of Reinert, Sr. may be rotated and lowered into the ground.

5. Claims 55, 67, and 79 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Mehnert** in view of **Byrne** and **Jain** as applied to claims 44, 56, and 68 above, and further in view of **Bass** [U.S. 5,375,058].

For claim 55, the combination of references above includes the claimed subject matter as discussed in the rejections above. However, although there are multiple

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detectors in the system of Byrne, there is no mention of triangulation to locate an object on a runway.

The surface detection system of **Bass** uses triangulation from at least one scanner to detect the position of an airplane on a runway. This reference is plain evidence that triangulation has been used for some time on runways and to detect objects thereon. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use triangulation in the combination of references above for the purpose of using such as well known and common computation configuration.

For claim 67, the claim is interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claim 55 above.

For claim 79, the claim is interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claim 55 above.

6. Claims 53, 54, 65, 66, 77, and 78 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Mehnert** in view of **Byrne** and **Jain** as applied to claims 44, 56, and 68 above, and further in view of **O'Meara**.

For claims 53 and 54, the combination of references includes the claimed subject matter as discussed above. However, there is no mention of a heating element for the transmitter or receiver.

The laser lighting system taught by **O'Meara** includes an optical system that assists in locating markers for navigation. One embodiment shown in Figure 28

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includes a heated glass cover for clearing frost and ice from the surface of the optical system so that operation of the optical system is not impaired.

The O'Meara reference is plain evidence that optical systems have used heating to clear the optical channels for proper operation. The primary reference is to be used outdoors where such weather conditions may be experienced. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include heating means in the optical system of Mehnert for the purpose of insuring proper operation in inclement weather.

For claims 65 and 66, the combination above includes the claimed subject matter as discussed in the rejection of claim 56 above. However, there is no mention of heating the support mechanism or optical system.

The claim is interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claims 53 and 54 above.

For claims 77 and 78, the combination above includes the claimed subject matter as discussed in the rejection of claims 68 above. However, there is no mention of heating the support mechanism or optical system.

The claim is interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claims 53 and 54 above.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bass [U.S. 5,469,371] uses infrared scanners as well as presence/absence detectors in a surface detection system for an airport.

Vandevoorde et al [U.S. 6,246,342] displays safe taxiing and approach-departure control in an airport.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John A. Tweel, Jr. whose telephone number is 703 308 7826. The examiner can normally be reached on M-F 10-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeff Hofsass can be reached on 703 305 4717. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JAT
5/17/04



JOHN TWEEL
PRIMARY EXAMINER